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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,836	02/25/2002	Masahiko Yukawa	09792909-5346	1041

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SONNENSCHN NATH & ROSENTHAL LLP  
P.O. BOX 061080  
WACKER DRIVE STATION, SEARS TOWER  
CHICAGO, IL 60606-1080

EXAMINER

DANIELS, ANTHONY J

ART UNIT PAPER NUMBER

2622

DATE MAILED: 11/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/082,836

Applicant(s)

YUKAWA ET AL.

Examiner

Anthony J. Daniels

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Response to Amendment***

1. The amendment, filed 8/15/2006, has been entered and made of record. Claims 1-9 are pending in the application.
2. Applicant's amendment to claims 1 and 5 has overcome the examiner's objection.

***Response to Arguments***

3. Applicant's arguments with respect to claims 1 and 5 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1,5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (US 2001/0050717) in view of Miyaguchi et al. (US # 5,508,740).

As to claim 1, Yamada et al. teaches a solid-state image pickup device (Figure 6) comprising: a circuit board (Figure 6, stepped wiring board "21") having an opening (Figure 3, *{The examiner interprets the opening as the gap extending vertically from sensor chip to the top of the stepped wiring board "21" of Figure 6. In the embodiment of Figure 11, Yamada teaches an image pickup opening extending vertically from the sensor chip past the top of the wiring board "5". The examiner cites this embodiment to show that the examiner's interpretation of the opening is reasonable within the context of the Yamada reference.}*); a chip of a solid-state image pickup element with a light-receiving surface placed at one surface of the circuit board so that the light-receiving surface of the chip of the solid-state image pickup element opposes the opening (Figure 6, image pickup semiconductor "4"); and an optical unit disposed at the other surface of the circuit board so that incident light is focused on the light-receiving surface (Figure 6, lens "2"). The claim differs from Yamada et al. in that it further requires a sensor package for receiving the chip and a seal adhered to the sensor package for sealing in the solid-state image pickup element, wherein the seal is placed within the opening of the circuit board.

In the same field of endeavor, Miyaguchi et al. teaches a sensor package containing an image sensor (Figure 1, Col. 3, Lines 61-63). The package also comprises an electronic cooling element for cooling the image sensor (Col. 4, Lines 15-18) and a seal adhered to the top of the package existing above the image sensor (Col. 4, Lines 4-8). In light of the teaching of Miyaguchi et al., it would have been obvious to one of ordinary skill in the art to house the chip

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of Yamada et al. in the package of Miyaguchi et al., because an artisan of ordinary skill would recognize that this would allow for photodetection with high S/N ratio (see Miyaguchi et al., Col. 1, Lines 35-37).

**Remarks about claim 1:** *The combination of Yamada et al. and Miyaguchi et al. places the seal of Miyaguchi et al. in the opening of the board of Yamada et al., because in Miyaguchi et al., the seal is placed above the image sensor.*

As to claim 5, claim 5 is a method claim corresponding to the apparatus claim 1. Therefore, claim 5 is analyzed and rejected as previously discussed with respect to claim 1.

As to claim 9, Yamada et al. teaches a solid-state image pickup device according to Claim 1, wherein the seal is a glass seal (see Miyaguchi et al., Col. 4, Lines 4 and 5).

5. Claims 2,3,6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (US 2001/0050717) in view of Miyaguchi et al. (US # 5,508,740) and further in view of Ackland et al. (Non-Patent Literature).

As to claim 2, Yamada et al., as modified by Miyaguchi et al., teaches a solid-state image pickup device of claim 1, including a sensor package (see Miyaguchi et al. Figure 1, package "210"). The claim differs from Yamada et al., as modified by Miyaguchi et al., in that it further requires that the sensor package include a signal processing circuit for processing a signal of the solid-state image pickup element.

In the same field of endeavor, Ackland et al. teaches a signal processing circuit on the same chip as the sensor package (see Figure 1: Conventional Multimedia camera). In light of the teaching of Ackland et al., it would have been obvious to one of ordinary skill in the art at the

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time the invention was made to modify the sensor package of Yamada et al., as modified by Miyaguchi et al., to include the signal processing circuitry of Ackland et al. Such a modification would allow for all of the processing to be done on a single chip; consequently, consuming less power and would allow for less space to be taken up on the circuit board.

As to claim 3, the limitations of claim 3 can be found in claim 2. Therefore, claim 3 is analyzed and rejected as previously discussed with respect to claim 2.

As to claims 6 and 7, claims 6 and 7 are method claims corresponding to the apparatus claims 2 and 3, respectively. Therefore, claims 6 and 7 are analyzed and rejected as previously discussed with respect to claims 2 and 3, respectively.

6. Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (US 2001/0050717) in view of Miyaguchi et al. (US # 5,508,740) and further in view Tullis (US # 6,535,243).

As to claim 4, Yamada et al., as modified by Miyaguchi et al., teaches a solid-state image pickup device of claim 1. The claim differs from Yamada et al., as modified by Miyaguchi et al., in that it further requires that the circuit board be connected to an external device without a connector.

In the same field of endeavor, Tullis teaches a connection between a computer and a digital camera via a wireless link (see Abstract, Lines 1-4; Figure 1; Col. 3, Lines 62-67). In light of the teaching of Tullis, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Yamada et al., as modified by Miyaguchi et al.,

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to include a wireless link to an external device. Such a modification would save space on the circuit board due to the smaller size of antennas to connectors.

As to claim 8, claim 8 is a method claim corresponding to the apparatus claim 4. Therefore, claim 8 is analyzed and rejected as previously discussed with respect to claim 4.

### *Conclusion*

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Watanbe et al. teaches a solid-state image sensor package having a seal adhered thereto and provided within an opening of a circuit board (see Drawing 3).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony J. Daniels whose telephone number is (571) 272-7362. The examiner can normally be reached on 8:00 A.M. - 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu can be reached on (571) 272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AD

10/23/2006



NGOC-YEN VU  
SUPERVISORY PATENT EXAMINER